

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: April 25, 1997  
Date Received: April 18, 1997  
Project: Metro Self Monitor Grab, PO #60612  
Date Samples Extracted: April 21, 1997  
Date Extracts Analyzed: April 22, 1997

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE  
FOR CHROMIUM, COPPER, NICKEL, AND ZINC  
USING METHOD 6010**

**Samples Processed Using Method 3005A**  
Results Reported as mg/L (ppm)

<u>Sample ID</u>	<u>Chromium</u>	<u>Copper</u>	<u>Nickel</u>	<u>Zinc</u>
M60612	0.38	0.27	0.23	<0.05
Method Blank	<0.05	<0.05	<0.05	<0.05

**FRIEDMAN & BRUYA, INC.**

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**QUALITY ASSURANCE RESULTS  
FOR TOTAL METALS BY  
INDUCTIVELY COUPLED PLASMA (ICP)  
(METHOD 6010)**

Laboratory Code: 77331 (Duplicate)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Sample Result</u>	<u>Duplicate Result</u>	<u>Relative Percent Difference</u>	<u>Acceptance Criteria</u>
Chromium	mg/L (ppm)	0.38	0.37	3	0-20
Copper	mg/L (ppm)	0.27	0.27	0	0-20
Nickel	mg/L (ppm)	0.23	0.23	0 a	0-20
Zinc	mg/L (ppm)	<0.05	<0.05	nm	0-20

Laboratory Code: 77331 (Matrix Spike)

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Spike Level</u>	<u>Sample Result</u>	<u>% Recovery MS</u>	<u>% Recovery MSD</u>	<u>Acceptance Criteria</u>	<u>Relative Percent Difference</u>
Chromium	mg/L (ppm)	5	0.38	94	95	80-120	1
Copper	mg/L (ppm)	5	0.27	91	92	80-120	1
Nickel	mg/L (ppm)	10	0.23	97	95	80-120	2
Zinc	mg/L (ppm)	5	<0.05	98	98	80-120	0

Laboratory Code: Spike Blank

<u>Analyte:</u>	<u>Reporting Units</u>	<u>Spike Level</u>	<u>% Recovery MS</u>	<u>% Recovery MSD</u>	<u>Acceptance Criteria</u>	<u>Relative Percent Difference</u>
Chromium	mg/L (ppm)	5	103	98	80-120	5
Copper	mg/L (ppm)	5	99	95	80-120	4
Nickel	mg/L (ppm)	10	103	103	80-120	0
Zinc	mg/L (ppm)	5	104	101	80-120	3

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

a - The analyte was detected at a level less than five times the detection limit. The RPD results may not provide reliable information on the variability of the analysis.



FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Beth M. Albertson, M.S.  
Bradley T. Benson  
Kelley Wilt

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044

April 25, 1997

INVOICE # 97ACU0425-1  
DUPLICATE COPY

Accounts Payable  
Alaskan Copper Works  
628 South Hanford St.  
Seattle, WA 98134

RE: Project Metro Self Monitor Grab, PO #60612: Results of testing requested by  
Gerry Thompson, Project Manager for material submitted on April 18, 1997.

1 water sample analyzed for  
Chromium, Copper, Nickel, and Zinc  
using Method 6010 @ \$65 per sample

\$ 65.00

Amount Due .....

\$ 65.00

FEDERAL TAX ID # (b) (6)



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April 25, 1997

Gerry Thompson, Project Manager  
Alaskan Copper Works  
628 South Hanford St.  
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on April 18, 1997 from your Metro Self Monitor Grab, PO #60612 project.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Kurt Johnson  
Chemist

keh  
Enclosures  
ACU0425R.DOC